

Serial No. 10/063,094

RD-27,190-3

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-23. (Canceled)

24. (Previously presented) A method for coating a substrate which comprises generating a set of at least two expanding thermal plasma plumes to produce plasma enhanced chemical vapor deposition or PECVD of a coating on said substrate, each of said plumes in said set having a central axis, wherein said central axes of said plasma plumes are oriented parallel to each other.

25. (Original) The method according to claim 24, wherein the substrate is a thermoplastic substrate.

26. (Original) The method according to claim 25, wherein the thermoplastic is a polycarbonate.

27. (Original) The method according to claim 24, wherein the plasma is an argon or argon-oxygen-organosiloxane plasma.

28. (Original) The method according to claim 27, wherein the coating is silica-based.

29. (Original) The method according to claim 24, wherein the substrate is moved past at least one set of expanding thermal plasma generating means.

30. (Original) The method according to claim 24, wherein substrate regions spaced from the center axes of expanding thermal plasma generating means producing said coating are heated prior to or simultaneously with the coating operation.

31. (Original) The method according to claim 24, wherein a plurality of sets of plasma plumes is generated to deposit coatings on more than one side of said substrate.

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32. (Original) The method according to claim 24, wherein a plurality of sets of plasma plumes is generated to deposit successive coatings on said substrate.

33. (Original) The method according to claim 24, wherein the substrate is planar.

34. (Original) The method according to claim 24, wherein the substrate is curved.

35. (Original) A method for coating a polycarbonate substrate, the method comprising generating a plurality of sets of at least two expanding thermal plasma plumes to produce successive coatings on said substrate while moving said substrate past said sets of plumes, each of said plumes in said set being codirectionally oriented; said coatings being silica-based and the plasmas being argon or argon-oxygen plasmas.

36. (Cancelled)

37. (New) A method of producing a plasma enhanced chemical vapor deposition coating on a substrate, the method comprising the steps of:

- a) providing the substrate to the deposition chamber;
- b) providing at least one set of expanding thermal plasma means, wherein the at least one set of expanding thermal plasma means comprises at least two expanding thermal plasma generating means that are codirectionally oriented and located outside and in fluid communication with a deposition chamber;
- c) maintaining the at least one set of expanding thermal plasma means at a pressure that is greater than a pressure in the deposition chamber;
- d) generating a plurality of plasmas within the at least one set of expanding thermal plasma means;
- e) expanding the plurality of plasmas into the deposition chamber to form a plurality of expanding thermal plasma plumes directed toward the substrate,

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wherein each of the plurality of expanding thermal plasma plumes has a central axis, wherein the central axes of the plurality of expanding thermal plasma plumes are oriented parallel to each other; and

f) providing at least one reagent to the plurality of expanding thermal plasma plumes, wherein the at least one reagent interacts with the plurality of expanding thermal plasma plumes to form the plasma enhanced chemical vapor deposition coating on a substrate.

38. (New) The method according to claim 40, further comprising the step of heating at least one portion of the substrate.

39. (New) The method according to claim 40, wherein the at least one portion of the substrate is located at a predetermined distance from the central axes.

40. (New) The method according to claim 40, wherein the step of heating at least one portion of the substrate comprises heating the substrate to a substantially uniform temperature.